SUBJECT INDEX

Acrylic monomers, p. 1367
Adhesive bonding, p. 1689
Aerodynamics, p. 529
Anisotropic viscoelasticity, p. 1658
Anisotropy, p. 814
Attachment lap, p. 215
Aurami equation, p. 464
Beams
  composite, p. 1516
  concrete, p. 1496
  cross-ply, p. 1516
  double-cantilever, p. 1408
  laminated, p. 1516
  laminated thick, p. 1516
  layered, p. 1516
  sandwich, p. 215
  tapered, p. 1479
  Timoshenko, p. 290
  width-tapered double cantilever, p. 862
Bidirectional glass, p. 939
Birefringence, pp. 464, 724
Blow molding, p. 759
Blown film, pp. 529, 662, 903
Bond mechanism, p. 1131
Boundary value problem, p. 390
Buckling, p. 290
Capillary rheometer, p. 1077
Carbon fiber sheets, p. 1131
Cavity pressure, p. 44
CFRP, pp. 862, 1208, 1729
Classical laminated plate theory, p. 1186
COG-SWELLS model, p. 651
Compaction, p. 15
Composite materials, pp. 421, 1186
Composite solid propellant, p. 233
Composite structures, pp. 1557, 1689
Composite tanks, p. 1375
Composites, pp. 138, 279, 472, 606, 776, 814, 827, 951, 1061, 1077, 1087, 1197, 1254, 1287, 1336, 1465, 1496, 1546, 1646, 1658, 1677, 1708
  fiber-reinforced polymer, p. 290
  glass/epoxy, p. 985
  glass fiber, p. 1592
  graphite/epoxy, pp. 1021, 1041
  knitted, pp. 118, 1605
  laminated, pp. 138, 1375, 1689
  model, p. 1122
  multiphase, p. 1630
  orthotropic, p. 390
  polymer, pp. 2, 454, 1619
  polymer matrix, p. 1254
  polymeric resin matrix, p. 1268
  prestressed, p. 684
  short fiber, p. 390
  textile, pp. 118, 151
  thermoplastic, p. 1103
  thermoset, p. 702
  thermosetting, p. 1242
  thick, p. 702
  3-D orthogonal woven, p. 151
  wood polymer, p. 1367
  woven, p. 198
Compression molding, p. 346
Compression speed, p. 724
Compression stroke, p. 724
Concrete cracking constitutive law, p. 1113
Conical shells, p. 1336
Constrained layer, p. 96
Contraction flow, p. 499
Core, p. 215
Crack, pp. 1186, 1208, 1231, 1428, 1689
Crack growth, p. 233
Crack propagation, pp. 279, 1689
Creep, p. 1220
Critical drilling thrust, p. 1287
Critical load, p. 290
Cruciform specimen, p. 1122
Crystallization, p. 464
Cure, pp. 951, 1465
Cure-induced stress test, p. 1304
Cure reaction-induced microphase separation, p. 614
Curing, pp. 279, 702, 979, 1011, 1242, 1304, 1367

(continued)

Subject Index (continued)
Damage, pp. 1173, 1208, 1428, 1557
Damage mechanics, p. 1360
Damping, pp. 96, 1658, 1677
Debonding, p. 279
Debonding energy, p. 1131
Deformation, pp. 985, 1254
Delamination, pp. 63, 735, 827, 1156, 1186, 1231, 1287, 1360, 1408, 1415, 1428, 1557
Dielectric sensors, p. 1465
Differential scanning calorimetry, p. 487
Diffusion, pp. 918, 939
Drag flow, p. 549
Draw resonance, p. 319
Dynamic mechanical analysis (DMA), p. 518
Eigenvalue, p. 1231
Elastic modulus, pp. 539, 592
End-notched flexure, p. 1408
Energy absorption, p. 606
Energy release rate, pp. 1186, 1231, 1360
Epoxy, pp. 279, 1087, 1646
Eshelby tensor, p. 592
Ethylene vinyl acetate, p. 539
Expandable mandrel, p. 684
Extrusion, pp. 15, 271, 437, 1077
  polymer, p. 15
  screw, p. 15
  twin-screw, p. 549
Failure, pp. 2, 138, 1061, 1087, 1113, 1220, 1254, 1268, 1605, 1689, 1729
Failure modes, pp. 215, 606, 1619
Fatigue behavior, p. 1021
Feed flow, p. 437
Feed pressure, p. 437
Feed section, p. 437
FEM, p. 928
Fiber, pp. 1496, 1677
  Aramid, p. 1605
  carbon, pp. 1087, 1415
  glass, pp. 279, 373, 1415, 1646
  multi-ply coated, p. 1630
  polyester, p. 118
  unidirectional carbon, p. 918
Fiber aspect ratio, p. 390
Fiber coating, p. 985
Fiber content, p. 606
Fiber distribution, p. 454
Fiber-matrix adhesion, pp. 1021, 1041
Fiber-matrix interface, p. 1619
Fiber orientation, pp. 454, 1729
Fiber volume fraction, pp. 118, 390, 702, 1021, 1041
Fickian diffusion, pp. 918, 939
Filament winding, p. 684, 1113
Filled screw channel, p. 15
Fillers, p. 224
Film, p. 319
Film casting, p. 319
Film tension, p. 319
Finite element, pp. 96, 151, 198, 215, 390, 421, 626, 759, 776, 1061, 1156, 1186, 1197, 1375, 1428, 1465, 1479, 1557, 1708
Flat weft knit, p. 1605
Flexural modulus, p. 279
Fracture, pp. 86, 373, 735, 862, 1087, 1131, 1186, 1254, 1605
Fracture mechanics, pp. 215, 862, 1156, 1254, 1689
Fracture surface, p. 1122
Fragmentation test, p. 1646
Free acid catalyst, p. 339
Free vibration, p. 421
Geometric nonlinearity, p. 421
Glass bead, p. 1077
Glass-epoxy, pp. 55, 224, 939, 1347
Graphite/epoxy, pp. 1186, 1496
Graphite powders, p. 224
Hamiltonian brackets, p. 464
HDPE, pp. 27, 35
Heat capacity, pp. 487, 979
Heat transfer, p. 437
Heat transfer (film) coefficient, p. 1103
Hellinger-Reissner principle, p. 1231
Hot runner, p. 44
Hygrothermal, pp. 918, 939, 985, 1197, 1619
Impact, pp. 63, 373, 539, 1322, 1415, 1428, 1729
Impedance matching, p. 27
Injection-compression molding, p. 724
Injection molding, pp. 44, 186, 261, 499, 572, 724, 1322
In-plane flow, p. 472
Interface, p. 224
Interfacial layers, p. 1630

Interlaminar fracture, pp. 373, 1041, 1415
Interlaminar layer, p. 1208
Interlayer modulus, p. 1186
Interlock fabric, p. 118
Joining plastics, pp. 27, 35
Joint, pp. 215, 1689, 1708
Knitted hole, p. 1605
Laminate model, p. 151
Laminates, pp. 215, 1173, 1268
  antisymmetry, p. 626
  CFRP, p. 1360
  composite, pp. 735, 1156, 1231, 1428
  cross-ply, pp. 1208, 1220
  CSM, p. 373
  fiber-reinforced composite, p. 626
  graphite/epoxy, p. 1231
  hybrid cross-ply, p. 776
  stiffened, p. 421
  symmetry, p. 626
Laser welding, p. 911
Layerwise theory, p. 1516
LDPE, pp. 319, 508, 651, 903, 1077
Linear elastic fracture mechanics (LEFM), p. 233
Liquid crystalline polymer reinforcement, p. 390
Liquid-filled tanks, p. 1375
LLDPE, pp. 319, 508
Loading
  compression, p. 1708
  hygrothermal, p. 985
  multiaxial, p. 138
  transverse, p. 1122
Loading rate effect, p. 1415
Loss factor, p. 96
Mechanical property, pp. 118, 346
Mechanical spectroscopy, p. 1677
Melt extrusion, p. 251
Melt filling, p. 724
Melt viscosity, p. 1077
Melting, p. 271
Methacrylic monomers, p. 1367
Methyl meth acrylate, p. 1367
Micromechanical analysis, p. 390
Micromechanical approach, p. 118
Microstructural geometry, p. 390
Microwave welding, pp. 27, 35
Mixed mode bending, p. 1408
Mode I stress intensity factor, p. 233
Mode II failure, p. 1254
Mold design, p. 572
Molding pressure, p. 724
Monolayer flat panels, p. 1605
Mori-Tanaka theory, p. 592
Multicavity molds, p. 572
Multilayer fiber reinforcement, p. 472
NDI, p. 63
Neural network, p. 186
Newtonian fluid, p. 472
Nondimensional spring constant, p. 626
Nonequilibrium PVT modeling, p. 261
Non-Newtonian fluid, p. 508
Nucleation and growth, p. 614
Nucleation kinetics, p. 614
Nucleation probability, p. 614
Numerical simulation, p. 186
Open-hole tensile test, p. 1605
Partial hybrid element, p. 827
Particle growth kinetics, p. 614
Particle size distribution, p. 614
Peel test, p. 862
PET, p. 373
Piezoelectric material, p. 1557
Pile, p. 290
Pin-on-disc, p. 55
Plasma drug level, p. 798
Plastic lens, p. 261
Plastics, pp. 437, 928
Plates, pp. 626, 1061, 1173
Poisson's ratio, pp. 1186, 1546
Polyamide-6 matrix, p. 1415
Polyaniline, pp. 27, 35
Polydioxanone, p. 487
Polyethylene, pp. 86, 662, 759
Poly(ethylene-co-propylene) (PEP), p. 518
Poly(ethylene terephthalate), p. 487
Polyisoprene, p. 549
Polymer blend, p. 271
Polymer crystallization, p. 464
Polymer melt, p. 651
Polymer melt rheology, p. 903
Polymer melt variables, p. 331
Polymer processing, pp. 15, 464
Polymers, pp. 279, 487, 499, 1197, 1254, 1646
  conductive, pp. 27, 35
  heterophase, p. 614
Polyolefin, p. 662

(continued)

Subject Index (continued)
Polypropylene, p. 346
Polystyrene, p. 487
Polystyrene-block-poly(ethylene-co-propylene)-block-polystyrene (SEPS or SEEPS), p. 518
Polyurethane elastomer, p. 118
Porous materials, p. 592
Porous media, p. 814
Powder, p. 15
Preform, p. 472
Prepreg carbon fiber tow, p. 1113
Prepregs, p. 339
Prestress, p. 279
PVT, p. 261
Reaction-diffusion competition, p. 614
Recycling, pp. 35, 373
Regression analysis, p. 928
Resin, pp. 472, 1304, 1479
  auto-catalyzed, p. 339
  epoxy, pp. 862, 1605
  interfacial, p. 735
  phenolic, p. 339
  polymeric, p. 390
  thermoset, p. 1304
  vinyl ester, p. 1592
Resin film infusion, pp. 1465, 1479
Resin impregnation, p. 472
Resin interlayer, p. 1186
Resin shrinkage, p. 1011
Resin thickness, p. 1186
Resin transfer molding (RTM), pp. 472, 951, 1242, 1450, 1465
Rigidity matrix, p. 626
Runner systems, p. 572
Sandwich, pp. 96, 1479
Scanning electron microscopy, pp. 606, 862
Screw, p. 437
Screw channels, p. 15
Seismic retrofit, p. 1113
SEM observations, p. 55
Semiconductor, p. 186
Shear, pp. 1254, 1336, 1516, 1729
  interlaminar, pp. 1041, 1516
  transverse, p. 1729
Shear deformation, pp. 290, 1516
Shear displacement, p. 1131
Shear flexure failure, p. 1113
Sheared fabric, p. 472
Shrinkage, pp. 186, 279
Single leg bending, p. 1408
Sliding wear, p. 55
Slow crack growth, p. 86
Smart materials, p. 1557
SMARTWeave, p. 1450
Solids conveying, p. 15
Sorption, p. 346
Spinodal decomposition, p. 614
Spiral mandrel dies, pp. 251, 662, 903
Stiffened panel, p. 1465
Stiffness, pp. 776, 1173
Strain, p. 279
Strain energy, p. 539
Strain energy release rate, pp. 735, 776, 1689
Strain rate, pp. 539, 606
Strength, pp. 63, 1087
  bond, p. 862
  compression, p. 224
  compressive, p. 1367
  flexural, p. 279
  in-plane shear, p. 1041
  interface, p. 1646
  peel, p. 862
  shear, p. 1729
  tensile hole, p. 1605
Stress, pp. 198, 1360, 1646
  feed, p. 437
  hygrothermal, p. 1630
  interfacial, p. 1630
  interlaminar, p. 827
  plane, p. 233
  residual, pp. 279, 684, 1011, 1304
  shear stress, p. 271
  transverse shear, p. 1516
Syntactic foam, p. 1347
TEM micrograph, p. 518
Temperature-modulated calorimetry, p. 487
Temperature-modulated DSC, p. 559
Temperature modulation, p. 487
Tension, pp. 63, 319
Textiles, p. 1465
Thermal aging, p. 1619
Thermal analysis, p. 487
Thermal conductivity, p. 559
Thermal contact resistance, p. 559
Thermal contraction, p. 261
Thermal cycle, p. 1208
Thermal fatigue, p. 1677

Thermal resistance, p. 339
Thermal shrinkage, p. 1011
Thermodynamics, p. 1197
Thermoforming, p. 673
Thermogravimetric analysis (TG), p. 339
Thermoplastic filament winding, p. 1103
Thermoplastic vulcanizates (TPVs), p. 518
Thermoplastics, p. 911
Thickness distribution, p. 759
Thickness effect, p. 233
Three-dimensional analysis, p. 673
Time-pressure superposition, p. 651
Torsion, p. 96
Transformation matrix, p. 626
Transient heat transfer analysis, p. 1103
Transmission electron micrograph, p. 862
Transverse cracks, pp. 776, 1208, 1220, 1360
Tsai-Wu criterion, p. 138
Ultrasonic, p. 63
Ultrasound, p. 331
Unfilled screw, p. 15
Unit cell geometry, p. 118
Unit cell model, p. 151
Vacuum assisted resin transfer molding (VARTM), p. 1450
Venturi effect, p. 529
Vibrational spectrum, p. 487
Vinyl ester, p. 1619
Viscoelastic, pp. 96, 549, 903, 1220, 1646
Viscoelastic crack growth, p. 86
Viscosity, p. 499
  elongational, p. 499
  extensional, pp. 499, 651
Void aspect ratio, p. 592
Volumetric heating, p. 1242
Warpage, pp. 261, 928
Waviness ratio, p. 198
Wire coating, p. 251
Woven fabrics, p. 1087
X-ray radioscopy, p. 814

AUTHOR INDEX

Abatan, A., p. 1186
Abdul Aleem, B. J., p. 844
Advani, S., p. 1450
Ahmad, Z., p. 844
Ainaoui, A., p. 798
Al-Abbas, S., p. 844
Allen, H. G., p. 198
Anlaş, G., p. 138
Aoki, Y., p. 1156
Ardiç, E. S., p. 138
Atarsia, A., p. 339
Baker, W. E., p. 271
Ballata, W. O., p. 1450
Barboni, R., p. 63
Barbosa, S. E., p. 413
Baron, D. T., p. 233
Batra, R., p. 1465
Baumann, C. E., p. 968
Beaumont, J. P., p. 572
Becker, F., p. 911
Beldica, C. E., p. 1658
Benatar, A., pp. 27, 35
Bhattacharyya, S. K., p. 1375
Bian, B., p. 319
Bigio, D. I., p. 549
Bijwe, J., p. 1573
Binienda, W. K., p. 684
Blanas, A. M., p. 390
Bogdanovich, A. E., p. 1689
Bouquet, G., p. 814
Brachos, V., p. 1479
Bradley, W. L., p. 86
Bréard, J., p. 814
Brincat, P., p. 499
Briotti, G., p. 63
Brown, E. C., p. 331
Buchardt, C., p. 44
Byon, O. -I., p. 1729
Caba, A. C., p. 1465
Cameron, J., pp. 279, 979, 1011
Cantwell, W. J., p. 373
Chakraborty, D., p. 735
Chang, R.-Y., p. 261
Chao, L.-P., p. 592
Chattopadhyay, A., p. 1557
Chen, J., p. 1479
Chen, S.-C., pp. 724, 1322
Chen, Y.-C., p. 724
Cheng, C.-K., p. 1322

(continued)

Author Index (continued)
Cheng, N.-T., p. 724
Chien, R. D., p. 1322
Chiruvella, R. V., p. 15
Christensen, J. H., p. 651
Chtourou, H., p. 339
Clark, D. C., p. 271
Co, A., p. 319
Coates, P. D., p. 331
Collins, T. L. D., p. 331
Dairanieh, I. S., p. 464
Davidson, B. D., p. 1408
Dawson, A. J., p. 331
de Haan, J., p. 1605
Deb, M. K., p. 968
Deng, S., pp. 1021, 1041
Derezinski, S. J., p. 437
Diao, F. X., p. 928
Dinner, H. P., p. 118
Doufas, A. K., p. 464
Dragomir-Daescu, D., p. 1557
Dungan, F. D., p. 472
El-Awady, N. I., p. 1367
Eraslanoglu, G., p. 138
Faillaci, D. A., p. 472
Fang, M. L., p. 928
Feng, Z.-N., p. 198
Fisa, B., p. 339
Friedl, C., p. 499
Frost, J. D., p. 290
Fukunaga, H., p. 1173
Ganapathi, M., pp. 96, 1336
Genidy, M. S., p. 1304
Geramita, K., p. 271
Ghosh, A. K., p. 1573
Ghugal, Y. M., p. 1516
Goswami, S., pp. 2, 421
Gupta, G. S., p. 985
Gupta, H., p. 1347
Hackett, R. M., p. 1113
Hadjichristidis, N., p. 642
Haldar, S., p. 626
Hamada, H., p. 1605
Han, J., p. 290
Hanna, I., p. 827
Harikumar, K. R., p. 346
Hashimoto, M., p. 1729
Hauck, J., p. 892
Hilton, H. H., p. 1658
Hoa, S. V., pp. 702, 827
Holmes, G., p. 1646
Hsieh, Y.-C., p. 261
Hsu, C.-H., p. 261
Hu, H., p. 1186
Huang, J. H., p. 592
Huang, M.-S., p. 724
Huang, Z. M., p. 118
Hunston, D., p. 1646
Indumathi, J., p. 1573
Jaluria, Y., p. 15
Jaworski, M. J., p. 572
Jensen, D. W., p. 1496
Jensen, J. H., p. 44
Joseph, K., p. 346
Jouannigot, S., p. 1268
Kameo, K., p. 1605
Kant, T., p. 421
Kenny, J. M., p. 413
Kiehl, C., p. 549
Kim, H. S., p. 539
Kim, R. Y., p. 1122
King, M. J., p. 1479
Kishore, pp. 55, 224, 1347
Kjaer, E. M., p. 651
Kobayashi, A., pp. 1208, 1360
Kobayashi, S., p. 1360
Kondo, K., p. 1231
Kontou, E., p. 390
Korte, J., p. 911
Koudela, K. L., p. 1408
Kuijk, E. W., p. 508
Kumar, N. V., pp. 776, 1428
Kumar, R. K., p. 55
Kumar, T. S., p. 96
Lamborn, M., p. 86
Langen, T., p. 844
Lauridsen, C. L., p. 44
Lee, J. W., p. 673
Lee, S. C., p. 186
Lee, S. M., p. 1254
Leroy, M., p. 1268
Li, R. K. Y., p. 1077
Liang, J. Z., p. 1077
Liang, K. S., p. 642
Lin, J. -L., p. 951
Liu, B., p. 1087
Liu, C. T., p. 233
Liu, S.-J., p. 759
Liu, Y., p. 15
Loos, A. C., pp. 1103, 1465

Lyons, D. W., p. 985
Lyons, J. S., pp. 1287, 1630
Ma, G. L., p. 1113
Madhukar, M. S., p. 1304
Magnus, F. L., p. 549
Mai, Y.-W., p. 1592
Majima, O., p. 1156
Mallard, H., p. 1268
Marcone, A., p. 63
Matsuo, K., p. 1208
Mattes, B. R., p. 875
Mavridis, H., p. 903
Mayavaram, R. S., p. 968
Mayencourt, C., p. 1677
McHugh, A. J., p. 464
McKenna, G. B., p. 559
McNamara, D., p. 844
Meade, J. G., p. 1496
Michaeli, W., p. 892
Miller, T. C., p. 233
Minguet, P. J., p. 1708
Mori, R., p. 518
Motahhari, S., pp. 279, 1011
Moy, S. S. J., p. 198
Mullins, C. L., p. 1113
Murali, A., p. 55
Naji, M. I., p. 702
Nakai, A., p. 1605
Nakamura, T., p. 1415
Nakao, K., p. 862
Nam, C., p. 1557
Nam, G. J., p. 673
Neuteboom, P., p. 508
Ogi, K., p. 1220
Ogihara, S., pp. 1208, 1360
Oh, J. -H., p. 662
Okoli, O. I., p. 606
Olley, P., p. 331
Ouriemchi, E. M., p. 798
Pal, N. C., p. 1375
Patel, B. P., pp. 96, 1336
Peterson, R., p. 1646
Pitchumani, R., p. 1242
Potente, H., p. 911
Pradhan, B., pp. 735, 776, 1428
Pyda, M., p. 487
Rabeony, M., p. 642
Ramakrishna, S., p. 118
Rao, N. S., pp. 776, 1428
Rao, R. M. V. G. K., pp. 918, 939
Rattazzi, D., p. 1465
Ray, C., p. 1061
Reddy, M. P., p. 968
Register, D., p. 86
Rice, J. R., p. 1113
Roy, S., p. 1197
Rozenberg, B. A., p. 614
Russell, J. D., p. 1304
Sambandam, C. T., p. 1336
Sampathkumkaran, P., p. 55
Sankaran, S., p. 1347
Saquab, A., p. 814
Sarkar, S. K., p. 626
Sastry, A. M., p. 472
Satsangi, S. K., p. 1061
Sawicki, A. J., p. 1708
Scarponi, C., p. 63
Schaller, R., p. 1677
Schläfli, D., p. 251
Secine, H., p. 1173
Seetharamu, S., p. 55
Self, R. A., p. 86
Senoguz, M. T., p. 472
Shao, H., p. 642
Sheikh, A. H., p. 626
Sherwood, J. A., p. 1479
Shih, P. -J., p. 1103
Shimpi, R. P., p. 1516
Siakali-Kioulafa, E., p. 642
Sidiropoulos, V., p. 529
Sigalov, G. M., p. 614
Simon, S. L., p. 559
Singh, V. K., p. 224
Sinha, P. K., p. 1375
Smith, G. F., p. 606
Song, Y. H., p. 928
Spathis, G., p. 390
Srihari, S., pp. 918, 939
Staicovici, S., pp. 27, 35
Steven, G. P., p. 151
Stojcevski, S., p. 539
Suemasu, H., p. 1156
Swann, D. M., p. 549
Takahashi, K., p. 1415
Takao, Y., p. 1220
Takeda, N., pp. 1208, 1360
Talwar, K., p. 499
Tamura, A., p. 518
Tan, P., p. 151

(continued)

Author Index (continued)
Tandon, G. P., p. 1122
Tani, Y., p. 1173
Tas, P. P., p. 508
Tasaka, M., p. 518
Tay, A. A. O., p. 118
Theotokoglou, E. E., p. 215
Thomas, S., p. 346
Todo, M., p. 1415
Tong, L., p. 151
Upadhyay, P. C., pp. 985, 1287, 1630
Van Assche, G., p. 885
Van Hemelrijck, A., p. 885
Van Mele, B., p. 885
Vergnaud, J. M., p. 798
Vlachopoulos, J., p. 529
Vu-Khanh, T., p. 1087
Walsh, S. M., p. 1450
Walton, D., p. 454
Wang, Y., p. 684
Wang, Z. R., p. 928
Weale, D. J., p. 454
White, J., p. 454
Winokur, M. J., p. 875
Wood, P. E., p. 529
Wu, C. -Y., p. 27, 35
Wu, Z. S., p. 1131
Wunderlich, B., p. 487
Xiao, X. R., p. 827
Yamashita, Y., p. 862
Ye, L., pp. 1021, 1041, 1592
Yeh, H.-L., p. 1546
Yeh, H.-Y., pp. 1322, 1546
Yoshida, K., p. 1231
Yoshizawa, H., p. 1131
Youn, J. R., p. 186
Young, J. H., p. 572
Young, W.-B., p. 951
Yushanov, S. P., p. 1689
Zhang, K. F., p. 928
Zhang, R., p. 1546
Zhang, S., p. 1592
Zhang, Y., p. 979
Zhao, J., p. 827
Zhong, Y., p. 1619
Zhou, J., p. 1619
Zhu, L., p. 1242